

In re Patent Application Serial No. 09/599,269
Amendment dated July 25, 2004
Reply to Office Action of May 25, 2004

Page 7 of 15

Remarks/Arguments

Despite the clear showing and strong evidence of patentability, the April 19, 2004 Advisory Action, which preceded the current RCE, for the first time:

- misreads the Marshall et al. document in an attempt to change a material (TYVEK Soloflo) that Dr. Mayer shows is very flimsy into something which it is not -- a multi-sheet, not-as-flimsy material -- in order to reject the plain evidence of patentability of applicant's pleated non-woven annular filter cartridge invention (see the portion of ¶4 of the Advisory Action that begins two lines from the bottom of p. 4);
- relatedly, challenges the direct and specific assertion by Dr. Mayer concerning the extreme flimsiness of the TYVEK filter material that is used in applicant's inventive pleated non-woven annular filter cartridge (see ¶1(d) of the Advisory Action); and
- attempts to somehow turn Dr. Mayer's strong showing of unobviousness into a brand new and unsupported (and, indeed, false) allegation of possible inoperability (see the first portions of ¶4 of the Advisory Action.

The Advisory Action, however, also makes points which suggest to applicant that incorporating certain preferred features (from dependent claims) into sole independent claim 1 could help in supporting the patentability of applicant's claims. Thus, such claim adjustments have now made.

The following is a brief summary and elaboration of the points discussed in the telephone interview of July 20, 2004:

In re Patent Application Serial No. 09/599,269
Amendment dated July 25, 2004
Reply to Office Action of May 25, 2004

Page 8 of 15

The Claim Amendments

As indicated would be done, claim 1 is now adjusted to include particular limitations which the previous Examiner, in the Advisory Action, accurately pointed out were not previously included in claim 1 -- despite certain arguments that had been advanced by applicant in favor of patentability.

More specifically, at least in ¶1(c) and ¶1(d) of the Advisory Action, the previous Examiner pointed out that claim 1 did not in fact require a *sole* layer (*i.e.*, *only* one layer) of the particular very flimsy non-woven filter material (TYVEK Soloflo) characteristic of applicant's claimed improved pleated non-woven annular filter cartridge. That is now changed in claim 1 by bringing the limitation of claim 12 (now canceled) into claim 1 and stating that the filter element "consists of a single layer of the filter material ...," *i.e.*, the specific "single-layer" filter material thereafter described in the remainder of claim 1.

Likewise, in ¶1(b) of the Advisory Action the previous Examiner implicitly suggested the inclusion of the "mesh layer" in claim 1, and that has now been done by reciting it as the only other part of the "filter element." (The mesh layer was previously in dependent claim 10.)

The Examiner should note that the rewording of claim 1 was facilitated by shifting the adjective "non-woven" in the early portion of claim 1 from being a modifier of "filter element" to more properly being a modifier of "filter material" -- *i.e.*, what amended claim 1 now requires to be a single layer. This change is helpful for clarity, but otherwise not significant.

Applicant urges the Examiner to recognize the patentability of the amended claims, which define a surprising invention -- a greatly improved pleated non-woven annular filter cartridge.

In re Patent Application Serial No. 09/599,269
Amendment dated July 25, 2004
Reply to Office Action of May 25, 2004

Page 9 of 15

**It Cannot Be Argued That the Specific
Non-Woven Filter Material Is Not TYVEK Soloflo.**

In ¶1(a) of the Advisory Action, the prior Examiner argues that “applicant’s base claim has not been narrowed down to any specific material of construction, in particular to TYVEK Soloflo filter material.” This is simply wrong.

The nature of the description of the *particular* polyethylene non-woven in the pending claims is such that the claims *are in fact limited* to TYVEK Soloflo, the material about which Dr. Ernest Mayer has provided critical information in his declaration. See, among other things, the last sentence of ¶5 of the March 11, 2004 Mayer Declaration, in which Dr. Mayer directly states that TYVEK Soloflo is “the TYVEK used in the unique annular pleated filter cartridges of the Rose patent application.” Dr. Mayer is intimately familiar with the characteristics of the subject material and the Examiner is simply wrong to challenge applicant’s statement (at least at p. 5, lines 6-8 of the specification and many times during patent prosecution) and the expert assertions of Dr. Mayer on this point.

**The Prior Examiner Mischaracterized Marshall et al.
to Debunk the Showing of Patentability of Applicant’s
Plicated Annular Non-Woven Filter Cartridge Invention.**

The prior Examiner is simply *wrong* in asserting, in ¶4 of the Advisory Action, (1) that the filter material disclosed in Examples 26 and 27 of Marshall et al. “is formed by a number of sheets laminated/bonded by calendaring to each other” and (2) that the “resulting (laminated/bonded) filter material” (which she correctly notes is within the thickness range of applicant’s claims) “therefore, would not be as flimsy or extremely flexible as Dr. Mayer suggested.” What

In re Patent Application Serial No. 09/599,269
Amendment dated July 25, 2004
Reply to Office Action of May 25, 2004

Page 10 of 15

such Advisory Action assertion involves is a wrongful effort to interpret Marshall et al. in a way that seeks to debunk the specific and direct evidence of filter-material flimsiness provided by DuPont's Dr. Mayer -- which shows that such thin material is very flimsy, so much so that it would not be thought, by the person of ordinary skill in the art, to be usable for pleated annular non-woven filter cartridges, given particular requirements for that class of products.

In strong response to such Advisory Action assertion, it must be pointed out that the filter materials of Examples 26 and 27 of Marshall et al., rather than being formed by "a number of sheets," can be shown (from the Marshall et al. document itself) to be *single* sheets -- in fact, the sheets which, as Dr. Mayer showed in ¶8 of his March 11, 2004 declaration, are "so very flimsy and different in nature from the non-woven material of the Gsell et al. patent that the person of ordinary skill in the art of annular pleated filter cartridges would not have considered [them] for this class of products." Examples 26 and 27 of Marshall et al., to which the prior Examiner referred in her Advisory Action, are described in detail on pp. 24-26 of Marshall et al. It is very apparent from a reading of Marshall et al. that the references to "whole-surface bonding" and a "calendar bonder" on p. 25 have nothing whatsoever to do with multiple sheets or laminates. Instead, such terms relate to the process of spin-bonding, and relate to how the surfaces of the *single* sheets are treated during the process of their manufacture.

This clear conclusion is further seen by reference to DuPont's United States Patent Nos. 3,532,589 and 4,652,322 which are referred to on p. 25 of Marshall et al. For example, the '589 patent makes this clear in the Abstract ("a non-woven sheet") and in column 1, lines 35-42, and elsewhere, and the '322 patent makes it clear in column 1, lines 7-9 ("a continuous process for

In re Patent Application Serial No. 09/599,269
Amendment dated July 25, 2004
Reply to Office Action of May 25, 2004

Page 11 of 15

bonding and stretching a fibrous polyolefin nonwoven sheet") and elsewhere. There is *no basis whatsoever* for concluding, as the prior Examiner did in the Advisory Action, that Examples 26 and 27 of Marshall et al. involve multi-sheet materials (laminates).

The prior Examiner's characterization is mistaken. Dr. Mayer's direct and informed statements concerning the very flimsy characteristic of the subject material are accurate, and strongly support patentability of applicant's claimed pleated annular non-woven filter cartridge invention.

**The New Suggestion of Possible Inoperability
Is Both Wrong and an Impermissible Handling
of Dr. Mayer's Strong Evidence of Patentability.**

The prior Examiner, in ¶4 of the Advisory Action, for the first time makes a most unusual and unsupported challenge to the very "operability of applicant's claimed invention" -- and bases it solely on the strong factual evidence of unobviousness from Dr. Ernest Mayer himself. This is impermissible -- and is tantamount to stating that because the invention is surprising and unexpected, it must not be an invention -- it must not work.

The prior Examiner's statement and her manner of thinking are both wrong, and they wrongfully seek to discredit and discount the inventive work of applicant. Applicant's plain assertion of operability (indeed, of significant and advantageous results) and Dr. Mayer's detailed recognition of the invention and of its unobviousness cannot be turned aside in this manner.

Applicant's invention is operable. And, it should be pointed out that, although in a rather unusual way, the prior Examiner has clearly recognized the patentability of applicant's improved pleated annular non-woven filter cartridge invention.

In re Patent Application Serial No. 09/599,269
Amendment dated July 25, 2004
Reply to Office Action of May 25, 2004

Page 12 of 15

In re Patent Application Serial No. 09/599,269
Amendment dated July 25, 2004
Reply to Office Action of May 25, 2004

Page 13 of 15

**Applicant's Invention Is a Patentable Advance Over
the Prior Art and the Application Should Be Allowed.**

In the last rejection, claims 1-4, 6, 7, 9-13, 22, 23, and 29-31 were rejected under 35 USC §103(a) as unpatentable over Gsell et al. in view of Marshall et al. As noted above, claims 1-4, 6-7, 9, 11, 13-15, 17 and 20-21 now remain pending, all other claims now having been canceled. Claim 1, the sole independent claim, as now adjusted, is patentably distinguishable over Gsell et al. in view of Marshall et al., and should be allowed, along with its dependent claims.

It has been shown that the Gsell et al. patent teaches a typical pleated annular non-woven filter cartridge -- having a non-woven filter material that is *much thicker* (indeed, 17 times thicker) than the filter material required by applicant's claims. Gsell et al. (like the earlier cited Stoyell et al. patent) involves a *non-woven* material which, as in other non-woven-using annular pleated filter cartridges of the prior art, is more than an order of magnitude thicker than the material in applicant's claimed invention. The Examiner, at ¶28 (pages 17-18) of the action of December 11, 2003, agreed that "Gsell et al. have disclosed or taught a filter material which is thicker (i.e., 17 times thicker) than what is claimed [by applicant]"

Even the very thinnest non-woven material contemplated in Gsell et al. is *nearly 17 times thicker* than the very thickest material of applicant's claimed pleated annular non-woven filter cartridge invention, which requires a specific type of non-woven material, which has "a thickness of less than about 0.15 mm." The Gsell et al. non-woven is *not* a TYVEK, and not TYVEK Soloflo; nor for that matter is it even polyethylene. Instead, it is polyethylene terephthalate (PET) or polybutylene terephthalate (PBT).

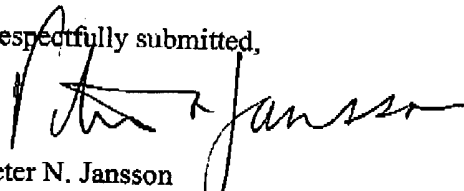
In re Patent Application Serial No. 09/599,269
Amendment dated July 25, 2004
Reply to Office Action of May 25, 2004

Page 14 of 15

Thick non-woven materials are seen in annular pleated filter cartridges, but the claimed TYVEK material is so very flimsy and different in nature that the person of ordinary skill in the art related would not have considered it a candidate for filter medium in this special class of products -- pleated annular filter cartridges. As already noted, this is strongly supported by detailed facts provided in the Mayer declarations, which are specifically on point in their support of the patentability of the claimed invention. Applicant incorporates by reference pertinent points and arguments made in the previous response.

In view of the detailed points made above, the rejection should now be lifted and the application allowed at this time. Applicant's claims as now adjusted clearly meet the tests of patentability. The invention is a highly useful and important advance in the annular pleated non-woven filter cartridge art, and provides advantages not heretofore available. Reconsideration is respectfully requested. The Examiner is invited to call the undersigned attorney if that would be helpful in facilitating resolution of any issue which might remain.

Respectfully submitted,



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